DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	WINKLEY POND	Lake Area (ha):	4.61
Town:	BARRINGTON	Maximum depth (m):	7.6
County:	Strafford	Mean depth (m):	4.6
River Basin:	Coastal	Volume (m^3):	212500
Latitude:	43°11'28" N	Relative depth:	3.1
Longitude:	70°59'48" W	Shore configuration:	1.31
Elevation (ft):	167	Areal water load (m/yr):	1.71
Shore length (m):	1000	Flushing rate (yr^{-1}):	0.40
Watershed area (ha):	16.9	P retention coeff.:	0.83
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:		17 January 1994	24 June 1993
DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 60%	SYNURA 65%
	#2	SYNEDRA 30%	(NET PHYTOPLANKTON
	#3	(ALL ALGAE SPARSE)	WERE SPARSE)
PHYTOPLANKTON ABUNDANCE (cells/mL)			130
CHLOROPHYLL-A (µg/L)			2.73
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 40%	CONOCHILOIDES 43%
	#2	GASTROPUS 26%	KERATELLA 16%
	#3	POLYARTHRA 12%	ASPLANCHNA 15%
ROTIFERS/LITER		105	114
MICROCRUSTACEA/LITER		7	30
ZOOPLANKTON ABUNDANCE (#/L)		118	147
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			5.6
BOTTOM DISSOLVED OXYGEN (mg/L)		10.9	0.8
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		< 1
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	3.4
Hypolimnion volume (m^3) :	23500
Anoxic volume (m^3) :	1000

CHEMICAL: **Lake: WINKLEY POND**
Town: BARRINGTON

	17 January 1994		24 June 1993		
DEPTH (m)	2.0	5.0	1.0	4.0	6.5
pH (units)	5.1	5.2	5.1	5.2	5.1
A.N.C. (Alkalinity)	0.2	0.1	-0.2	0.0	0.5
NITRATE NITROGEN	0.06	0.10	< 0.02	< 0.02	< 0.02
TOTAL KJELDAHL NITROGEN	0.10	0.20	0.30	0.25	0.40
TOTAL PHOSPHORUS	0.009	0.009	0.008	0.011	0.029
CONDUCTIVITY (μmhos/cm)	58.2	57.4	57.5	52.8	56.5
APPARENT COLOR (cpu)			14	14	36
MAGNESIUM			0.32		
CALCIUM			< 1.0		
SODIUM			7.8		
POTASSIUM			0.65		
CHLORIDE	14	14	13	13	14
SULFATE	3	3	2	2	2
TN : TP	18	33	38	23	14
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	1	3	0	9	Meso.

COMMENTS:

1. This is a small acid pond with essentially no buffering capacity (ANC). The low color values suggest the acidity is not caused by organic acids from wetlands drainage. This is a perched pond with no surface inlets or outlets. It also has a very small watershed. Direct precipitation is probably a significant source of water to the pond, along with groundwater from nearby wetlands, thus accounting for the acid conditions.

2. Chloride values suggest salted highway drainage (Route 125 passes very close to the pond).

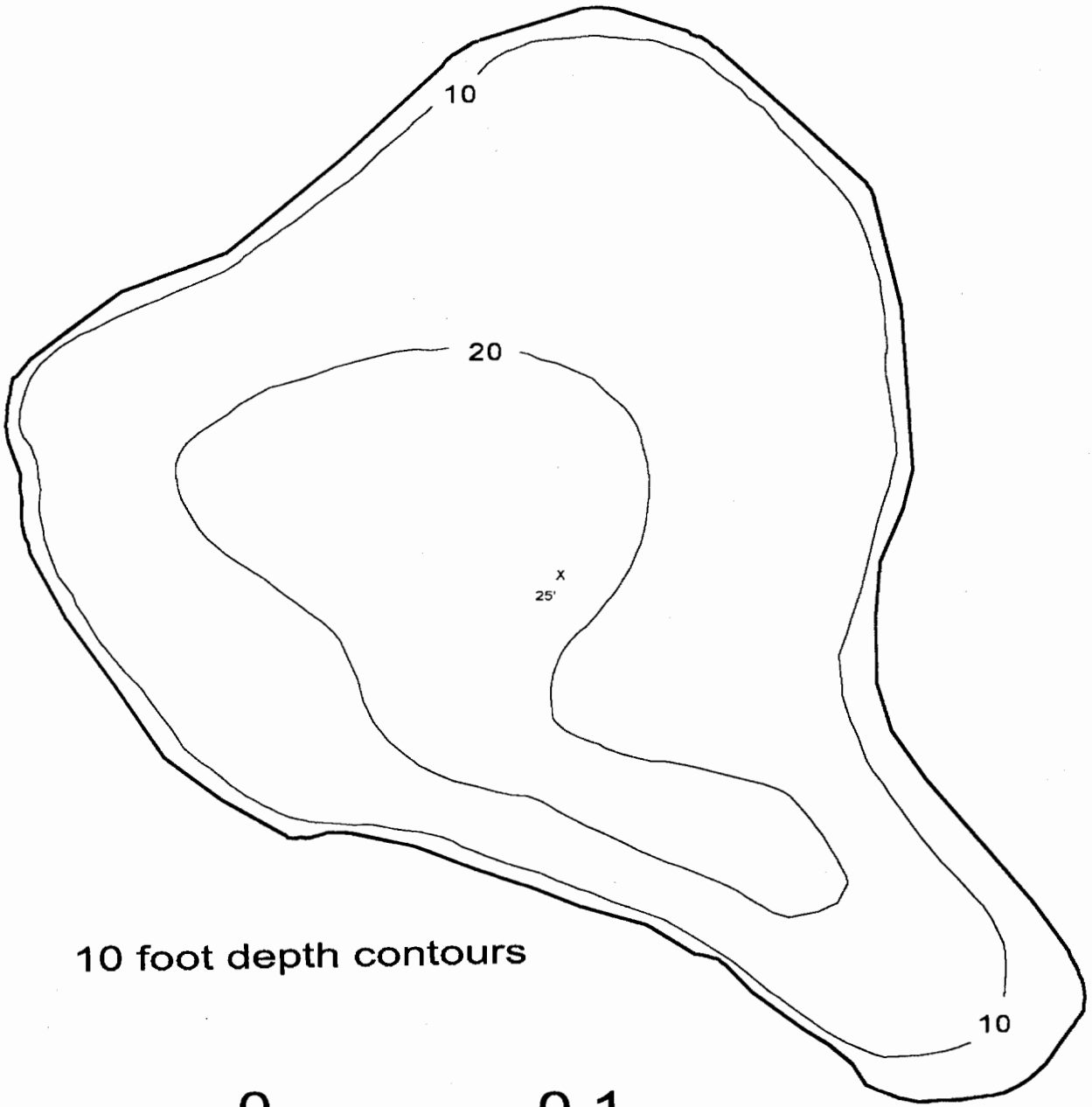
3. Much of the littoral zone (nearshore area) was steeply sloped, particularly in the wide (north and northwest) part of the pond.

4. Numerous blips on the fathometer were observed which were surmised to be fish passing under.

5. Green algae strongly dominated the wholewater phytoplankton; with the dominant genera being Schroederia (45%) and Oocystis (35%).

Winkley Pond

Barrington



10 foot depth contours

0 0.1

Km

111-314

FIELD DATA SHEET

LAKE: WINKLEY POND **TOWN: BARRINGTON**
DATE: 06/24/93 **WEATHER: BREEZY, CLOUDLESS 80F**

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	21.9	8.2	92 %
	1.0	21.3	8.1	91 %
	2.0	21.0	8.0	90 %
	3.0	20.0	8.4	92 %
	4.0	13.3	9.7	91 %
	5.0	10.1	5.6	49 %
	6.0	8.5	1.4	12 %
	7.0	8.0	0.8	7 %

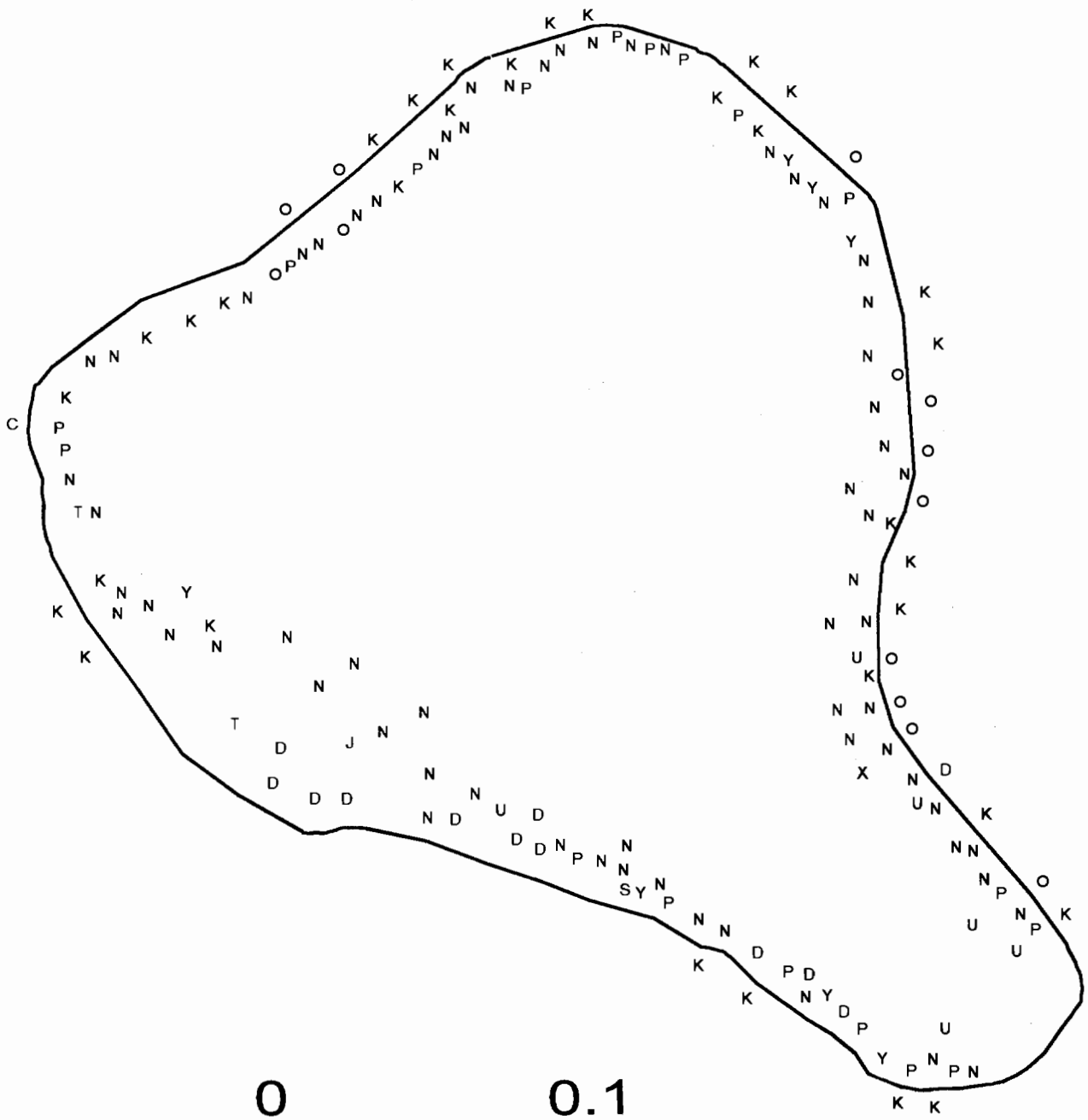
SECCHI DISK (m): 5.6
BOTTOM DEPTH (m): 7.4
TIME: 1110

COMMENTS: A depletion of dissolved oxygen in the bottom waters had already occurred in this June sampling. Later in the summer the zone of depletion would probably be much greater.

***Dissolved oxygen values are in mg/L**

Winkley Pond

Barrington



AQUATIC PLANT SURVEY

LAKE: WINKLEY POND TOWN: BARRINGTON DATE: 06/24/93

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
N	Nymphaea	White water lily	Scat/Common
O	Cephalanthus occidentalis	Buttonbush	Scattered
X		Sterile thread-like leaf	Sparse
D	Decodon verticillatus	Swamp loosestrife	Scattered
U	Utricularia	Bladderwort	Scattered
P	Pontederia cordata	Pickerelweed	Sparse
K	Kalmia	Laurel	Scat/Common
Y	Nuphar	Yellow water lily	Sparse
S	Sparganium	Bur reed	Sparse
T	Typha	Cattail	Sparse
J	Juncus	Rush	Sparse
C	Chamaedaphne calyculata	Leatherleaf	Sparse

OVERALL ABUNDANCE: Common

GENERAL OBSERVATIONS:

1. Several small patches of filamentous green algae were observed.

2. The identification of Kalmia is in question. The field notes indicated a leatherleaf-like bush with purplish flowers.